

We claim:

1. In an applicator apparatus comprising a vehicle adapted for movement along the ground, a conventional hydraulic source supplied by a pump from a hydraulic fluid reservoir, an applicator boom extending laterally from the vehicle and pivotally attached to the vehicle such that the applicator boom can pivot up and down with respect to the vehicle, an extendable hydraulic shoulder cylinder operatively connected between the vehicle and the applicator boom and connected to the conventional hydraulic source such that the shoulder cylinder moves in a first direction to lower the applicator boom when a conventional valve control directs hydraulic fluid through a lowering conduit into a lowering port of the shoulder cylinder, and moves in an opposite second direction to raise the applicator boom when the conventional valve control directs hydraulic fluid through a raising conduit into a raising port of the shoulder cylinder, a gauge member kit for attachment to the applicator apparatus, the kit comprising:

a gauge member adapted to ride along a surface of the ground and adapted for attachment to an outer portion of the applicator boom to support the applicator boom such that the applicator boom can move up and down with the gauge member as the gauge member rides along the ground;

an active hydraulic circuit adapted for operative connection to the raising conduit wherein an active operating pressure of the hydraulic fluid in the raising conduit can be controlled, and wherein hydraulic fluid can pass from the pump through the active hydraulic circuit to the raising conduit, and from the raising conduit through the active hydraulic circuit to the hydraulic fluid reservoir, whereby the shoulder cylinder extends and retracts in response to forces exerted thereon that are greater or less than a force exerted by the active operating pressure, and wherein the active operating pressure is controlled to allow the shoulder cylinder to extend and retract as required to allow the applicator boom to move up and down with the gauge member as the gauge member rides along the ground;

an active control operative to switch the boom from conventional mode, wherein the conventional valve control directs hydraulic fluid through the raising
30 conduit into the raising port of the shoulder cylinder and the active hydraulic circuit is disconnected, to active mode wherein the active operating pressure of the hydraulic fluid is present in the raising conduit.

2. The kit of Claim 1 wherein the conventional valve control is an electric control.

3. The kit of Claim 2 wherein when the boom is in the active mode and the conventional valve control is moved in a direction to conventionally raise the applicator boom, the active hydraulic circuit is disconnected and the boom moves up.

4. The kit of Claim 3 wherein the conventional valve control is further moved in a direction to conventionally lower the applicator boom, the active hydraulic circuit is re-connected and the boom moves down.

5. The kit of Claim 1 wherein the applicator apparatus further comprises:

a boom frame attached to the vehicle, and right and left applicator booms pivotally attached to corresponding sides of the boom frame and corresponding right and left shoulder cylinders attached to the boom frame and corresponding applicator
5 booms;

and wherein the kit further comprises:

right and left gauge members adapted for attachment to corresponding right and left booms;

wherein the active hydraulic circuit is adapted for connection to right and left
10 raising conduits connected to the corresponding right and left shoulder cylinders.

6. The kit of Claim 1 wherein the applicator apparatus further comprises:

a boom frame attached to the vehicle, and wherein the applicator boom is pivotally attached to the boom frame and the shoulder cylinder is attached to the boom frame and applicator boom;

5 a center boom attached to the boom frame and extending laterally substantially across a width of the vehicle;

an extendable hydraulic center cylinder operatively connected between the vehicle and the boom frame and connected to the conventional hydraulic source such that the center cylinder moves in a first direction to lower the center boom when a
10 center valve control directs hydraulic fluid through a center lowering conduit into a center lowering port of the center cylinder, and moves in an opposite second direction to raise the center boom when the center valve control directs hydraulic fluid through a center raising conduit into a center raising port of the center cylinder;

and wherein the kit further comprises:

15 a center gauge member adapted for attachment to the center boom such that the center gauge member can ride along a surface of the ground supporting the boom frame such that the boom frame moves up and down with the center gauge member as the center gauge member rides along the ground;

a center active hydraulic circuit adapted for operative connection to the center
20 raising conduit wherein a center active operating pressure of the hydraulic fluid in the center raising conduit can be controlled, and wherein hydraulic fluid can pass from the pump through the center active hydraulic circuit to the center raising conduit, and from the center raising conduit through the center active hydraulic circuit to the hydraulic fluid reservoir, whereby the center cylinder extends and retracts in response
25 to forces exerted thereon that are greater or less than a force exerted by the center active operating pressure, and wherein the center active operating pressure is controlled to allow the center cylinder to extend and retract as required to allow the

center boom to move up and down with the center gauge member as the center gauge member rides along the ground;

30 wherein the center hydraulic cylinder can be selectively connected to the conventional hydraulic source or to the second active hydraulic source.

7. The kit of Claim 1 wherein the gauge member comprises a wheel.

8. The kit of Claim 7 wherein the wheel is a castor wheel biased in a forward travel direction.

9. The kit of Claim 1 wherein the applicator apparatus comprises a closed center hydraulic system.

10. The kit of Claim 1 wherein the applicator apparatus comprises an open center hydraulic system.